AMENDMENTS TO THE CLAIMS

Claims 1-7. (cancelled)

8.(new) A network system providing secure communication services, comprising:

a plurality of pieces of switching equipment, being connected to each other through a public network, and accommodating data terminals; and

central management and control equipment connected to the plurality of pieces of switching equipment,

wherein the central management and control equipment includes a database storing a plurality of sets of a public key and a private key, each assigned to a piece of switching equipment,

a first piece of switching equipment, accommodating a data terminal of a calling party, transmits a dial number of a called party and a user number of the first piece of switching equipment to the central management and control equipment,

the central management and control equipment retrieves a public key of a second piece of switching equipment accommodating a data terminal of the called party and a common key, which is used between the first and second pieces of switching equipment, sends the retrieved public key and common key to the first piece of switching equipment,

the first piece of switching equipment encrypts and sends the common key by the public key of the second piece of switching equipment to the second piece of switching equipment, and

the second piece of switching equipment decrypts the encrypted common key sent from the first piece of switching equipment by a private key of the second piece of switching

equipment, so that the common key can be used to perform secure communication between the first and second pieces of switching equipment.

9.(new): The network system providing secure communication services according to claim 1,

wherein the central management and control equipment is connected to the plurality of pieces of switching equipment by a No. 7 common channel signaling network, and the first piece of switching equipment encrypts the dial number of the called party and the user number of the first piece of switching equipment by using a common key used between the first piece of switching equipment and the central management and control equipment when transmitting them to the central management and control equipment.

10.(new) The network system providing secure communication services according to claim 1,

wherein the central management and control equipment encrypts the public key of the second switching equipment and the common key used between the first and second pieces of switching equipment to transmit them to the first piece of switching equipment, and the first piece of switching equipment decrypts the common key used between the first and second pieces of switching equipment by a private key to the first piece of switching equipment.

11.(new): The network system providing secure communication services according to claim 1,

wherein when the first piece of switching equipment identifies a distinctive number corresponding to secure communication service prior to an originating number of the calling party, the first piece of switching equipment shifts to a secure communication mode and sends the dial number of the called party and the user number of the first piece of switching equipment to the central management and control equipment.

12.(new): A method for providing secure communication services in a network system having a plurality of pieces of switching equipment, being connected to each other through a public network, and accommodating data terminals, and central management and control equipment connected to the plurality of pieces of switching equipment, the method comprising the steps of:

in a database provided at the central management and control equipment, storing a plurality of sets of a public key and a private key, each assigned to a piece of switching equipment;

from a first piece of switching equipment accommodating a data terminal of a calling party, transmitting a dial number of a called party and a user number of the first piece of switching equipment to the central management and control equipment;

in the central management and control equipment, retrieving a public key of a second piece of switching equipment accommodating a data terminal of the called party and a common key, which is used between the first and second pieces of switching equipment, sends the retrieved public key and common key to the first piece of switching equipment;

by the first piece of switching equipment, encrypting and sending the common key by the public key of the second piece of switching equipment to the second piece of switching equipment; and

by the second piece of switching equipment, decrypting the encrypted common key sent from the first piece of switching equipment by a private key of the second piece of switching equipment, so that the common key can be used to perform secure communication between the first and second pieces of switching equipment.